during the night, in limited quantities, if circumstances should require it. The moment the patient came under the influence of the ether, he cried out "I am easy now." The paroxysms were not only moderated, but the intervals between them were much longer, so that the poor patient already experienced some relief. Nearly an hour would sometimes elapse between the paroxysms. He was ill for two weeks, during which time he would occasionally suffer from his tetanic symptoms, but good nursing and a steady perseverance in the remedies finally relieved him. The calomel was continued for the first four days; after that, reliance was principally placed upon the sudorific effects of the morphia, and the anæsthetic agents which have been named. He took four hundred and ten grains of calomel, (by which he was freely purged and salivated,) twenty-five grains of morphia, consumed twenty-eight ounces of sulphuric ether, and eight ounces of chloroform.

Ununited Fracture of the Femur of one year's standing, successfully treated by Resection, Denudation, and Retaining the ends of Bone by means of Wire. By Daniel Brainard, M. D., Professor of Surgery in Rush Medical College. (*The North-Western Med. and Surg. Journal*, Aug. and Sept. 1848.)—The subject of this case was a man 34 years of age, who, on the 14th of March, 1847, had his leg fractured, and the knee, leg and ankle of the same side severely bruised by a tree falling on him. There was much bruise at the point of fracture, but the skin was not broken. The limb was laid upon a double inclined plain, the leg enveloped in a roller, and a piece of flannel pinned about the thigh. Extension was made by means of "half a brick" suspended from a cord attached to the foot, and passing over the foot of the bed; and counter extension by means of a "flat-iron" suspended from a cord attached to the pelvis and passing over the head of the bed. At the end of five and a half weeks, the weight attached to the foot was increased to about sixteen pounds, and the limb was placed in a different apparatus. During the whole of the treatment the roller upon the leg was removed every three or four days, and the member at such times subjected to considerable movement. At the end of eleven weeks, the apparatus was taken off, and the patient removed about a mile, and directed to rise and walk on crutches. This, however, he was unable to do. After some time the surgeon examined it and finding it ununited, moved the fragments freely, and re-applied the apparatus for seven weeks.

During the whole of this time the point of fracture remained very tender; and during the night or when it was moved, there was spasmodic action of the muscles, which drew forward the upper fragment, "so that it seemed as if it would come through the skin," and shortened the member very much.

When he applied to Prof. Brainard, about the middle of February, 1848, on examination, the fracture was found to be situated seven inches above the knee, very oblique, the superior fragment placed in front, the ends overlapping, when no extension was made, not less than four inches, and the fragments so movable that they seemed to have no connection with each other or with the surrounding parts. The extremity of the upper fragment in particular, when acted on by the muscles, and drawn inwards, forwards, or outwards, could be felt as if beneath the integuments only, and seemed to move as if in a sac. Both ends could be felt rounded; there was no tenderness, and the member could be bent almost to a right angle at the point of fracture, without giving pain. The member hung dangling, entirely useless; the thigh, from the want of use, and the pressure of an apparatus which he kept buckled around it, was atrophied and attenuated to a remarkable degree, while the foot and leg, from the obstructed circulation, were swollen, œdematous, and indurated, so that it but partially regained its natural appearance when the pressure was removed, and the patient placed in a horizontal position.

On the 1st of March, 1848, with the assistance of Drs. Herrick and Blaney, Dr. Brainard operated in the following manner:—

"An incision was made four and a half inches in length, upon the anterior and exterior side of the thigh, and carried down to the fracture. The ends of the bones were exposed and found to be covered with a tough fibrous tissue of great firmness. This was removed by means of the bone nippers from the end of the lower fragment; the end of the upper piece being very sharp, and having great tendency to project forwards, a chain saw was passed around it, and about an inch of it removed.

Extension being then made, the two extremities were approximated to each other, and a piece of silver wire, (like that used for constricting polypi,) doubled and twisted, was slipped over each end so as to encircle the two bones. The ends of the wire were then twisted together with sufficient firmness to prevent movement without exercising much pressure on the surface of the bones. The limb was then placed in an angular splint, the sides of the wound brought together with stitches of interrupted suture and splints applied so as to restrain its movements. The operation lasted perhaps half an hour, was well borne by the patient, and no vessel required a ligature. It was evidently, so far as the immediate depressing effects were concerned, much less severe than amputation of the thigh. Using the chain saw, instead of turning out the ends of the bones to saw them off, renders the operation less severe. Considerable inflammation followed, which was combatted with antiphlogistic treatment. The wound healed by the first intention excepting at two points of sufficient extent to allow of the escape of matter. On the third day the spasm of the muscles of the thigh, before mentioned as having followed the fracture, occurred, being excited by the slightest touch or motion. It was so severe as to shorten the limb somewhat, and was attended with such violent efforts at displacement as to show conclusively the necessity of the wire, or some equally effective restraining means. The suppuration diminished, the patient's appetite returned, and he was in every way comfortable.

The object of the wire—that of holding the ends of the bone firmly in contact until adhesions might be formed—having been accomplished, it was desirable to remove it. This was done on the 24th of March, as carefully as possible, but some inflammation followed, and on the 4th of April, fluctuation was perceived on the inside of the thigh, and a puncture was made. Under the use of astringent injections, the abscess contracted rapidly, and on the 16th of April there remained only a fistulous opening on the outside, and another on the inside, through which a few drops of serum could be pressed. At the end of twelve weeks he was allowed to move the limb in bed, and in four months he walked on crutches, the union being complete. At the present time, August 1st, he moves the member with great facility; the muscles, atrophied from long inaction and pressure, are being developed by use; and, although considerably shortened, it is far superior to any artificial limb.

Successful Amputation at the Shoulder-joint, for Gunshot Wound—patient under Chloroform. By Paul F. Eve, M. D., Prof., &c. &c. (*South. Med. and Surg. Journ.*, Nov. 1848.)—The subject of this case was a black boy, accidentally wounded by the discharge of a gun at the distance of a few feet. The load, which consisted of squirrel shot, entered the left arm about an inch below the acromion process of the scapula, and the shot, after cutting the os humeri nearly in two, passed in the direction of the shoulder-joint and subclavian artery. His pulse, when Dr. E. first saw him, forty-eight hours after the accident, was over 100; his fingers of the injured side he said were benumbed, and he complained of pain in the region of the wound. The arteries of the left upper extremity pulsated distinctly; the age of the patient was eleven; his general health good. His bowels had been moved with salts, and fifty drops of laudanum had also been given to procure ease and sleep.

Amputation having been decided upon in consultation, it was performed—with the assistance of Dr. Dugas who controlled the circulation by pressure on the subclavian artery, and of Dr. Means who administered the chloroform—in the following manner. "The heel of the amputating knife was applied upon the anterior edge of the acromion, and by a continuous sweep around the head of the os humeri, two flaps, one anteriorly and the other posteriorly, were made, and the operation completed by ligating four or five arteries. In carrying the elbow forward, to throw the head of the bone backwards so that the knife might the more easily pass through the joint, the humerus was fractured, so near was its complete division by the shot, which must have entered *en masse*. The time consumed in the amputation, was thus increased by this fracture, but the longest estimate of those present was twenty-two seconds.

"The insensibility," Dr. E. states, "produced by the chloroform was extremely satisfactory; the operation having been performed and the dressing applied without